

# CANAL OWNER'S MANUAL



**A MANUAL FOR PEOPLE WHO LIVE  
ON THE CANALS IN CAPE CORAL.  
THIS GUIDEBOOK WILL BE YOUR  
REFERENCE TOOL TO HELP YOU  
UNDERSTAND THE BEAUTIES AND  
PROBLEMS OF THE WATER IN  
YOUR BACKYARD.**



## **A THIRD OF YOUR BACKYARD IS WATER!!**

This manual is for you - the people who live on the canals in Cape Coral. Like your operator's manual for your car or your lawnmower, this guidebook will be your reference tool to help you understand the beauties and problems of the water in your backyard. If you have any questions, comments, or ideas to be included in future editions, the Environmental Resources Division (ERD) main telephone number is 574-0785.

### I. HOW YOUR CANAL WORKS - ECOLOGY

#### II. SALTWATER LIFE

- A. *Algae*
- B. *Artificial Habitats*
- C. *Crabs*
- D. *Fish*
- E. *Manatees*
- F. *Mangroves*
- G. *Oysters and Barnacles*
- H. *Rip-Rap*

#### III. FRESHWATER LIFE

- A. *Aquatic Vegetation*
- B. *Fish*
- C. *Muscovy Ducks*
- D. *Reptiles*
- E. *Seawall Alternatives*

#### IV. YARD CARE

- A. *Edge Protection*
- B. *Fertilizers and Pesticides*
- C. *Irrigation*
- D. *Pesticide Alternatives*

#### V. WASTE DISPOSAL

- A. *Aquariums*
- B. *Boats*
- C. *Cars*
- D. *Dumping*
- E. *Fishing Line*
- F. *Pet Wastes*
- G. *Septic Tanks*

#### VI. TROUBLESHOOTING

#### VII. APPENDICES

- A. *Agency Telephone Numbers*
- B. *Waste Oil Collection Points in Cape Coral*
- C. *Hazardous Waste*



## WATER CYCLE



Your body and those of other organisms is more than 90% water. Obviously, it is very important to keep water available to all of us. This happens through the water cycle, which begins with evaporation from the earth's surface. The sun "boils" water into the air where it cools and condenses to form clouds which release rain drops. When rain hits the ground, some sinks in, helping to recharge the water table.

Some runs off into canals, lakes and streams and travels to the ocean. Part of it is "boiled" off again and continues the cycle.

We get our water for drinking, agriculture and industry from ground and surface water bodies. Most important for us is water that sinks into the ground. Where the earth's surface is hardened by pavement and buildings, less water sinks in and less ground water is available. We need to landscape so as to maximize the water that sinks in.

## RUNOFF

As water runs off it picks up a variety of things including sediments, trash, fertilizers, pesticides and oils washed off streets and lawns. The more runoff there is, the more foreign material flows into canals. We need to remember that if it falls on the ground it can end up in the water!

## FOOD WEB

There's a web of life that works for all of us in every canal, lake and stream. Plants are the base of this web. They get their energy from the sun and, in the process of growing, absorb nutrients and other runoff wastes. Plants are eaten by a variety of consumers in canals. Many are too tiny to be seen, but others include small fish, crayfish, and insects. Energy in these consumers is utilized by predators such as frogs, big fish, alligators and many kinds of birds. In time, all of these consumers will die and be decomposed by bacteria, which are eaten by other consumers. Materials are used over again and the energy has to be continuously supplied by the sun. This web works for all of us by cleaning up many wastes and by trapping poisons where they can do less harm. Since the action is solar-powered, it costs us nothing. But this web can be overwhelmed by pollution and then it stops providing us with the free clean-up.

**BE CAREFUL WHAT YOU FEED YOUR CANAL - YOU CAN KILL IT!**

## ALGAE

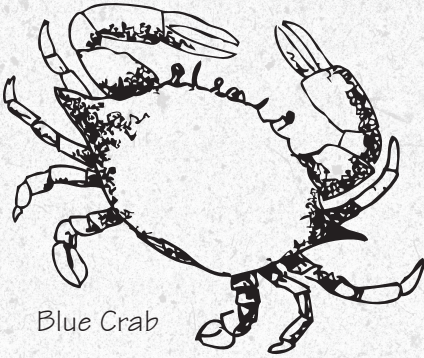
Several types of algae abound in salt waters of the Cape. Green and brown algae are often seen and will grow on anything immersed in water receiving sunlight. Occasionally, free-floating red, green or brown algae may drift by or show up on the beach.

## ARTIFICIAL HABITATS

The ERD has deployed different types of artificial habitats throughout the city. These can be placed under your dock or at the seawall base. They provide places for small shrimp, crabs and fish to hide in and survive a vulnerable stage in their life cycle. The ERD has plans for habitats if you are interested in building one and installing it.

## CRABS

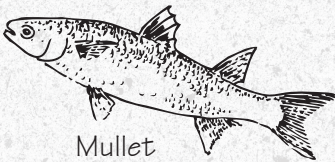
Many types of crabs can be found in saltwater areas in the Cape. Blue crabs are one of the swimming crabs. The meat is edible and quite tasty, although cleaning the crab requires perseverance. Spider crabs, arrow crabs and gray marsh crabs are much smaller than blues and do not swim, but scurry around on docks and pilings.



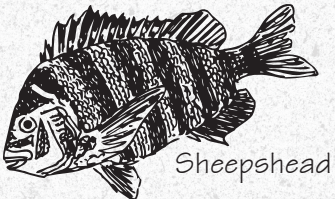
Blue Crab

## FISH

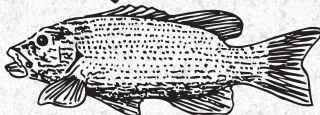
Some of the more common fish in saltwater canals are mullet, snook, sheepshead, and mangrove snapper. Mullet have flat heads and often jump out of the water. The silvery snook are a prized gamefish, but are seasonally restricted. They have a black horizontal line down their sides. Sheepshead are rounder and have thick, black, vertical stripes. Mangrove snappers are red to grey in color, and can be found in a variety of habitats. Contact Florida Fish and Wildlife Conservation Commission (FWC) for information on regulations.



Mullet



Sheepshead



Mangrove Snapper



## MANATEES

Manatees can be present in saltwater canals all year long; however, they are spotted more often from October to March. During winter months they come up canals to forage for food and keep warm. The leading cause of manatee deaths is collisions with boats, so be alert for their presence. Signs to watch for include circular “boils” on the surface left by their tails, and dark, whiskery coconut shapes, which are their noses as they surface to breathe. Manatee warning signs are posted on many docks in Cape Coral, and there are several marked slow zones in the Caloosahatchee River. All areas within one-quarter mile of shore in the Caloosahatchee are slow zones.



Mangrove

## MANGROVES

Mangroves are an extremely important link for fisheries. Prop roots provide shelter for small animals and help to stabilize shorelines. They primarily grow in salt-water areas, but are also found in brackish water. If your mangroves are between 6 and 10 feet tall, homeowners can trim them back to no lower than 6 feet without a permit. Go on-line or call the Florida Department of Environmental Protection (FDEP) for more specific information regarding mangrove trimming for residential properties. (See Appendix.)



Barnacle

## OYSTERS AND BARNACLES

The shelled, flat animals attached to docks and seawalls are oysters. Smaller, mountain-shaped structures are barnacles. These animals are filterfeeders, taking tiny particles out of the water column for food. Oysters are edible, but can only be taken from waters approved by the FDEP, as they may contain harmful bacteria.

## RIP-RAP

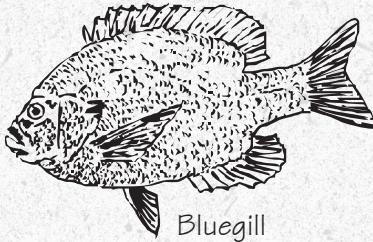
Rip-rap is rock that is 1-2 feet in diameter, placed along the base of seawalls in piles that are at the mean low water mark. It is an excellent way to provide habitat, supplying hiding places for aquatic organisms. It also helps to stabilize seawalls.



## AQUATIC VEGETATION

Plants in canals are divided into two categories, submerged and emergent. Submerged vegetation is what most people refer to as “those weeds in the canal”. The emergent vegetation is primarily composed of cattails, but also includes pickerelweed, arrowhead and others. Both types of vegetation are good habitat and food for aquatic creatures. Cattails are fairly prolific, and can crowd out other species. Cattails and exotic weeds can be treated with herbicides and/or removed. However, if too much is removed, and the nutrient load (the amount of fertilizers or other nutrients entering a water body) has not changed, something else will readily take its place. Instead of clear water with large submerged weeds, you may get cloudy, green water with lots of microscopic plants. Due to the benefits these plants give, herbicide treatments will be provided for navigational and exotic removal purposes only. Contact Lee County Hyacinth Control to report excessive vegetation growth. (See Appendix.)

## FISH



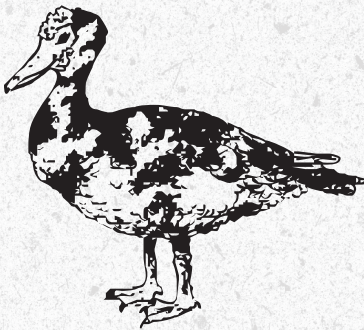
Bluegill



Largemouth Bass

The two best-known species of fish in freshwater canals are bass and bluegill. Largemouth bass are a favored gamefish. They have black vertical stripes on an olivegreen background and a streamlined shape. Bluegills are flatter, more pancake-shaped, and tend towards blue around the gills and stomach. Other species found are channel catfish, shiners, and mosquito fish.

## MUSCOVY DUCKS

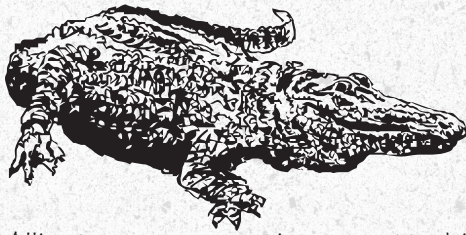


Muscovy Duck

Muscovy ducks can be a nuisance in freshwater canals. If people feed them, more nutrients are added to the water than if the ducks had to forage for themselves. Feeding also leads to healthier ducks, thus more eggs and more ducks. They often use docks as bathrooms. These immigrant birds from Central and South America also push out native species by taking over food sources and habitat.

REMEMBER, IT IS ILLEGAL TO FEED WILDLIFE.





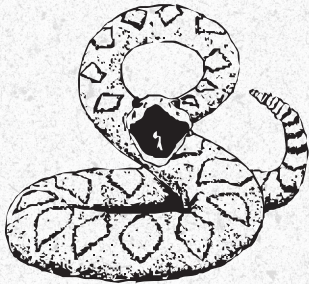
Alligator

## ALLIGATORS

Alligators are sometimes spotted in the freshwater canals, and should NEVER be fed as it is illegal. This could lead to associating food with people and potentially tragic consequences. Although they are not the bloodthirsty animals they are portrayed to be, they should be treated with caution and respect.

## SNAKES

There are forty-four native snake species in Florida. Of the six that are venomous, four are found in this area: the water moccasin (also known as cottonmouth), coral snake, and diamondback and pygmy rattlesnakes. Moccasins live in and around water and wet areas, and can be aggressive. Coral snakes are rarely seen and prefer to stay away from people. The rattlers can be found in flatwoods and suburban yards.



Diamondback  
Rattlesnake

Other snakes that live here include black racers, garter snakes and banded water snakes. Water snakes resemble moccasins, so it is best to keep your distance from any snake found near or swimming in canals.

## TURTLES



Snapping Turtles

Turtles are very common in freshwater canals. They will quickly submerge when approached to swim to the safety of vegetation. One of the more common species is the Florida red-belly. Others include the smaller mud and musk turtles, the soft-shelled turtle, and the snapping turtle. Respect the snapping turtle, as its strong jaws could take a finger off.

## SEAWALL ALTERNATIVES

The ERD and city engineering department have put up examples of shoreline alternatives along Lake Kennedy park. The littoral zone provided by an alternative provides habitat for fish and wading birds, and helps to filter out nutrients and toxins from lawn and stormwater runoff. There are many kinds of aesthetically pleasing plants that can be used along shorelines. The ERD has put together a littoral plant guide for use by residents. There are also examples of suitable plants at the Lake Kennedy park and the public boat ramp at Rosen park.



## CANAL EDGE PROTECTION

Plants along canal edges help to filter stormwater runoff by absorbing runoff, fertilizer and pesticides. They also stabilize soil and reduce erosion. Given the usual slopes and soil conditions in this area, fertilizer placed on plants within 50 feet of a canal can end up in that canal.

Keep compost piles away from edges. These piles have nutrients that could leach out during storms, run off into canals and cause excessive plant and algae growth.

Maintaining swales also keeps canals clean. Swales retain water, which is then filtered before it goes into canals or groundwater. Swales need to stay sodded to prevent erosion. Vacant lots need to have vegetation on them to prevent erosion. Many people park cars or boats on vacant lots, damaging the vegetation. All the eroded sand and dirt ends up going into storm drains, outfall pipes, and then into canals.

## FERTILIZERS AND PESTICIDES

Apply fertilizers and pesticides sparingly. These materials can easily wash into the canal, which will lead to problems. Any kind of yard clippings should be used as compost or placed outside for pickup. Leave grass clippings on the lawn for nutrient value. **Do not dump yard waste into the canal as this is illegal.** They will also decompose and use up oxygen needed by fish.

Consider using mulch or compost as alternatives to commercial fertilizers. Besides providing nutrients, these materials also retain moisture around roots, so there is less need for irrigation.

Choose plants that don't generally need fertilizers or pesticides. Native species tend to be hardier than exotic ones, thus easier to care for.

Before discarding, rinse pesticide and fertilizer containers thoroughly, and use the rinsate on the plant or area.

## IRRIGATION

To estimate the amount of water going on the yard, place 5-10 straight-sided containers (3"-6" in diameter), in random zones for an in-ground irrigation system, or in equal intervals in a line from the sprinkler to the edge of the water pattern for a hose-end sprinkler. Turn on the water for 15 minutes. Measure the water depth in each container. Determine the average depth of water (sum of depth divided by number of containers). Multiply by four to determine the irrigation rate per hour. Grass needs 1/2 inch of water once or twice a week. Learn your lawn's needs by attending a Florida Yards & Neighborhoods (FYN) class. Everyone needs to conserve!

## PESTICIDE ALTERNATIVES

It is possible to control some pests without pesticides. Some bugs can be removed by hand-picking or by spray from the hose. You can buy BT (*Bacillus thuringiensis*) for control of leaf-eating caterpillars. Soap or oil sprays are effective against aphids and whiteflies. Other remedies include beer for slugs and snails, organic powders (i.e. diatomaceous earth, boric acid) for roaches and fleas, and salt for weeds and grasses in sidewalk cracks. For further information, attend a FYN class.





## DUMPING

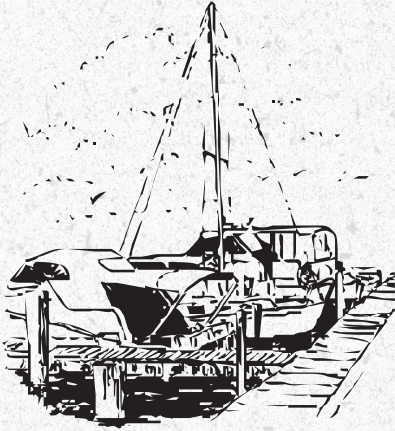
If you see signs of dumping or other pollution, call the Citizens Action Center (CAC). After normal business hours, contact the non-emergency police number. Waste oil can be taken to recycling stations; other household chemicals can be taken to Lee County Household Waste Facility. (See Appendix.)

## AQUARIUMS

Aquarium water, plants, or animals should not be dumped into canals. These plants and animals are creating problems throughout Florida due to their capacity to push out native inhabitants. Two examples are walking catfish and Hydrilla, a very invasive aquatic plant.

## BOATS

Keep boat motors in good repair to prevent oil and gas leakage. Never empty bilges into canals. Use onshore bathrooms and empty holding tanks at designated pump-out stations. Do not spill fuel or overfill the tank. Keep out of shallows to avoid stirring up the bottom and destroying seagrasses. These grasses can take up to five years to recover from prop scars. If you find yourself in these areas, go slowly, or pole along with the motor raised.



## CARS

Note fluid leaks and repair them immediately. This is for your safety as well as for that of wildlife. Never dump oil, antifreeze, etc. into canals, storm drains, ditches, or soil. Take oil to recycling stations. (See Appendix.) Wash cars in sodded areas instead of driveways to reduce runoff. This also helps to irrigate lawns.

## FISHING LINE

Never leave monofilament line around, including bits left over from changing lures. Pelicans and other aquatic life could become entangled and die.

## PET WASTES

Pet droppings should be put into a proper sewage system. Carry a scoop and bag when you're out with pets. Flush, or bury feces at least 6-8 inches deep and 50 feet away from water.

## SEPTIC TANKS

Make sure your septic system works properly. Avoid using garbage disposals, as grease and food particles may clog tanks. Do not pour chemicals down drains or toilets. Contact Lee County Household Chemical Waste Facility if you have questions regarding chemical disposal. (See Appendix.) Minimize water flow into tanks by using water-saving devices in showers and toilets.



## GREEN WATER

This is most often caused by too many nutrients and too little water flow. It is also contributed to by overuse of fertilizer and destruction of rooted plants along the shore and bottom. When present, these rooted plants use up nutrients and keep algae from growing as quickly.

## WEED MAT

The submerged plants in canals decompose and float to the surface. It is primarily seen in the late summer and early fall. Weed mats can generally be removed with a rake.

## BAD ODORS

The septic field may not be working and may leak into canals, leaving a rotten-egg smell. Low oxygen and too much organic waste could also be a cause, or it could be anaerobic mud turned by storm events. If this is present after storms, the mud will gradually settle again.

## FILM ON WATER

Some is natural and normal, and will dissipate with rainfall or time. Oil and gas could cause this - look near boats, watch for people dumping oil, etc. into storm drains as they lead directly into canals.

## SLUDGE ON TOP OF WATER

After storms or high winds, this could be algae broken loose from the bottom. It will gradually settle again.



## DEBRIS, ETC.

Help us by picking it up with a net and throwing it into your trash or call the CAC.

## FLOATING PLANTS

Water hyacinths, water lettuce and duckweed may be present in seawater canals. This is usually due to low salinity. The plants may survive during the rainy season, as the river is fresh, but as it turns saltier, they will die.

## DARK WATER

This could be tannins released from upstream, which should eventually wash out. If the water is cloudy, then it could be a turbidity problem due to dumping or construction work. Call the CAC to report a possible violation.

## FISH KILLS

In warm weather, this is often caused by a lack of oxygen so the fish suffocate. This could also be due to the introduction of toxins (i.e. pesticides) by runoff or dumping. Call the ERD or CAC to report.



## OTHER RESOURCES AND CONTACTS

Unless otherwise indicated, all phone numbers below are within the 239 area code.

Cape Coral Citizens Action Center (CAC)	574-0425
Cape Coral Environmental Resources	574-0785
Cape Coral Hazardous Materials	574-3223
City Web Site	capecoral.net
Florida Dept. of Environmental Protection (FDEP) Regional Office	332-6975 dep.state.fl.us
Florida Fish and Wildlife Conservation Commission (SW Regional Office)	1-863-648-3200 myfwc.com or floridaconservation.org
Wildlife Alert Hotline	1-888-404-FWCC (3922)
Florida Yards & Neighborhood (FYN) Classes	549-4606 lee.ifas.ufl.edu/FYN/FYNHome.shtml
Lee County Animal Services	533-7387 leelostpets.com
Lee County Extension Office	533-4327 lee.ifas.ufl.edu
Lee County Household Chemical Waste Facility	533-8000 leegov.com/solidwaste
Lee County Hyacinth/Mosquito Control	694-2174 lchcd.org or lcmcd.org
Seatow (Fuel Spills)	945-4820 seatow.com
South Florida Water Management District (SFWMD)	1-800-432-2045 sfwmd.gov
Waste Management	334-4115 wm.com

## WASTE OIL COLLECTION IN CAPE CORAL

All Advance Auto Parts Locations:	Wal-Mart Tire & Lube Center
1318 Del Prado Blvd., 574-1010	1619 Del Prado Blvd.
16 NE Pine Island Rd., 772-4333	772-9924
821 Cape Coral Pkwy. East, 541-0911	

## HAZARDOUS WASTE

Lee County Household Chemical Waste Facility  
6441 Topaz Court  
Fort Myers, FL 33916  
533-8000  
leegov.com/solidwaste



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